

CASES AND OBSERVATIONS

ON THE

Gal 7 S. c.

HYDROPHOBIA:

BY

J. VAUGHAN, M. D. *K.*

*Sæpe vero etiam nova incidere genera Morborum, in quibus
nihil adhuc usus offenderit.* Celsus Præfat.

TO WHICH IS ANNEXED,

AN ACCOUNT OF THE

CÆSARIAN SECTION;

WITH REFLECTIONS ON DIVIDING THE

SYMPHYSIS OF THE OSSA PUBIS,

THE SECOND EDITION,

L O N D O N :

Printed for T. CADELL, in the Strand; and
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HYDROGRAPHIC

J. A. G. H. M. M.

THE UNITED STATES OF AMERICA
NAVY DEPARTMENT



SECTION

WITH REFERENCE TO DIVISION THE
W. T. M.

REMARKS OF THE FIRST PART

THE SECOND PART

LONDON

Printed for T. Cadell, in the Strand; and
G. Robinson, Paternoster Row.

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T H E
P R E F A C E.

I MAKE no apology for presuming to offer to the Public the following Cases of the *Hydrophobia*; a disease rapid in its progress, and of the most fatal tendency.

The Reader who expects to find in the following pages a never-failing *Nostrum* recommended, or even a successful method of treating that disorder, will be disappointed. The Author's intention is, to give a succinct account of the *Hydrophobia*, with its concomitant Symptoms, in the order they occurred; and to report the appearances after death, of the parts more immediately

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ately concerned in the living subject. This he is enabled, in the present edition, to do with more precision, from the occurrence of a Third Case, since the publication of the two former. He trusts the little reliance which can be had, upon the most celebrated medicines yet known, will appear in a stronger light, from his having, in the last Case, employed a greater variety of them. But, he is sorry to add, with no more advantage than in either of the former ones.

The prevalence of Empirical Agency in the Hydrophobia, but more especially in the Prophylactick part, is a disgrace to Science, and, it is to be hoped, will speedily be supplanted, by the diligent enquiry of Physicians into this curious disease; for, to speak the truth, but little is to be found in the immense quantity of medical volumes now extant,

P R E F A C E.

extant, on which much dependance can be had.

To have given the Public some examples of the Hydrophobia yielding to Medicine, would have been a much more pleasing task to the Author, than that of recording the inutility of it, in a disorder to which mankind is hourly exposed, from the increased number of domestic animals: But the Reader who will be contented with nothing less than a prosperous termination of disease, will do right in sparing himself the trouble of perusing the subsequent pages, and in returning to those examples which have been given as instances of the *Hydrophobia* being cured, and of which we have quite enough at present.

I profess to relate with candour what I saw, (and in so doing to remove much error with which the subject

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subject is obscured) and to shew the Public, at least, what will *not* cure this dreadful disorder. It is possible the *Pathologist*, may thank me for my trouble, and that the *Physician* will not be quite so well satisfied with the cures he has read of before the present publication.--- Under these sentiments, and with great deference, I submit it to the world.

Annexed to the present Edition will be found, *Reflections on the Operation of Cutting the Symphysis of the Os Pubis*, by Dr HUNTER.

To the character which that Gentleman has so justly acquired, I cannot propose to add, by any thing I can say of it; but let me, as the Member of a Large Community, which has received the greatest advantages from his labours, here express my warm acknowledgments, whilst I may congratulate not only
the

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the present age, but posterity, upon that plentiful source of information his *magnificent Museum* must afford; in which will be found, every thing that can instruct the man of Science, or gratify curiosity.

Sept. 15th, }
1778. }

J. VAUGHAN.

O F

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ERRATA.

- P. 26. line 3d, for *ouncas* read *ounces*.
- P. 31. line 15th, for *sumanter* read *sumatur*.
- Ditto, last line, for *Ammonicum* read *Ammoniacum*.
- P. 42. in the note, for *latps* read *later*.
- P. 90. line 13th, for *differient* read *different*.

OF THE HYDROPHOBIA.

CASE the First.

Paucæ enim dissectiones in tanto numero sunt, quas historia præcedat satis accurata, non ætatis soluti et constitutionis illius hominis, sed & modi & temporis, tum quo virus, & unde contractum fuerit, tum quo perstiterit & quam symptomatum omnium, & quo die ingruentium, majore minorive assiduitate & sævitia, tum deinde omnium, quoad fieri potest, quæ in universis et singulis cadaveris ejusdem hominis partibus, præter naturam reperta sunt.

Morgagni de causis & sedibus morborum per anatomen indagatis. lib. 1^{mo} Epist 8^{va} Art. 32.

THOMAS NOURSE, a strong lusty lad of the age of 14, was admitted an in-patient of the Leicester-Infirmery on Tuesday the 16th of November 1773, having that day-month been bit by a mad fox-hound. The wound was a large lacerated one on the left cheek, and bled very freely upon the bite being inflicted.

inflicted.---The day after he was bit he went to the sea, where he was dipped with all the severity usually practised under so disagreeable an operation. A celebrated remedy was also administered, known by the title of the *Ormskirk-Medicine* of whose *infallibility* we have heard much*.

---A common adhesive plaister was applied to the part, after sea-bathing; and in the course of a month, without any further trouble, the wound was healed; excepting a small portion somewhat more than an inch in length, and in breadth about one tenth. This yielded no discharge, and was quite in a cicatrizing state.

On the Sunday preceding his application for admission into the Infirmary, he began to complain of a tightness over his temples, and a pain in his head. His appetite likewise failed him for the first time since the accident, and altho' he slept tolerably well the preceding night, he did not feel himself refreshed as usual by it. On Monday the tightness was increased, as also the head-ach; his dislike to food was greater; and

* This medicine was bought of the person in Leicester, who is deputed by the proprietor to vend it for him.

and he now became apprehensive that he could not swallow. He passed this night not only without sleep, but was restless and uneasy; he was likewise very much annoyed by a *boiling heat* in his stomach, which was continually ascending to the fauces.

On Tuesday morning he was bled, after which he swallowed under great disgust and perplexity, another dose of the Osmiskirk Medicine. The morning was cold, and he complained every now and then of the air suffocating him*; he was therefore very intent upon mitigating its coldness, ere it was applied to the fauces, by holding a handkerchief constantly to his mouth; but a much greater inconvenience arose at the sight of a puddle of water, which frequently occurred in the streets, through which he passed in going to the Infirmary, and which never failed to produce a dreadful agony.

The boy was perfectly sensible. His pulse soft, but unequal; and without that firmness I should have expected to have found in health; his respiration was free and

* *Insueta Aeris Querela.*

and equal. There was no præternatural heat upon his skin ; nor did he complain of thirst. The singular appearance of his eyes was very striking, and is, I believe, peculiar to people labouring under the Hydrophobia. There was a fierceness displayed, with a mixture of timidity, that I despair of impressing the reader properly with ; and which at this distance of time, I cannot recollect, without feeling some uneasiness. The colour of the eye was also changed ; for the iris had assumed an orange hue, and the pupil was very much dilated. The blood drawn, was firm in its texture, of a florid colour, and with a due proportion of serum, so that it could not be distinguished from blood taken from a person in the most perfect health.

Upon my asking him whether he felt pain any where ? or whether he had any propensity to bite ? or if he found his head confused, or his spirits hurried ? he replied negatively, in a very plaintive tone.

I now placed before him unawares, a basin of water, from which he instantly turned away with the utmost horror ; striking violently at the same time the *scrobiculus*

scrabculus cordis, and making a hideous moaning, whilst the *risus sardonius* seized the muscles of the jaws and face.

In this situation he was ordered to go to bed; having first swallowed a scruple of *Musk*, with two grains of *Extr. Thebaic.* made into a soft bolus.

It was curious to observe, what pains he took to swallow the medicine, and what perseverance he shewed in getting it into the oesophagus. He fixed his eyes steadfastly upon it for some little time, and having applied it to his mouth, he crammed it as far back into the fauces as he could reach, which seemed to be the superior part of the gullet; after which deglutition was performed with little or no difficulty; but he rejoiced much when he had accomplished his purpose.---This lack of difficulty in swallowing, when the substance was conveyed into the oesophagus, I desired some of the faculty who were present to remark; as it contradicted an opinion universally received, respecting the disorder.

Upon endeavouring to lie on his back in bed, he immediately felt the same sensation as when cold air blew upon him:

The

upon which he started up, endeavouring to recover an erect posture as soon as possible, with the body bent a little forward; ---and under this position his uneasy feelings speedily vanished.

The propriety of avoiding every thing that might renew these painful symptoms, was obvious.-The attendants therefore had it strictly in charge, to be particularly diligent in administering to his wants; and to give him every assistance that might contribute to alleviate his sufferings; to which the construction of his bed was no mean auxiliary; as will appear from consulting Mr. WHITE's treatise on the puerperal fever, where a drawing of it is to be met with.

The disease was in itself novel to me; was so important, and in its progress so rapid, as not to admit of my being satisfied with trusting him to the action of *Musk* and *Opium* entirely.--How much had been said of the efficacy of *Mercury* did not escape my memory. Nor did the so much famed *Tonquin Medicine*, fail to represent itself to my recollection on this occasion. A composition then of fifteen grains of
Musk,

Musk, one of *Turbith Mineral*, and five * grains of the *Theban Extract*, made into a soft bolus, was directed to be taken once in three hours; an ounce of the stronger Mercurial Ointment, was to be rubbed on the cervical vertebræ, and shoulders; and the following embrocation was directed to be applied to the throat, renewing it as often as the part grew dry.

R. *Tinct. Thebaic. uncias duas*

Acet. Saturnin. semunciam. m.

On touching the external fauces with this embrocation, he was immediately thrown into convulsions. A repetition was therefore prohibited; and altho' a cloth wet with it, was afterwards ordered to be used, (the boy's eyes being first covered with a napkin) yet the same effect was produced. The following plaister was therefore substituted

* This quantity of opium, considering the frequency of the repetition, will no doubt appear large; but I was too conversant with the advantages resulting from such doses, repeated in spasmodick diseases, and saw but too manifestly the hasty advances of so terrible a malady, to demur in ordering the above quantity; which the reader will presently see, was not only quite a safe dose, but failed to produce those lasting sedative effects, which might reasonably have been expected from it.

stituted in its place; and this he bore without complaint.

R. *Extr. Thebaic. semunciam.*
Campbor. Spt. Vin. in pulv. redact.
drachmas tres.

Confect. Damocr. drachmas sex M. f. em-
plastrum faucibus externis applicandum. *

Having now occasion to use the chamber-pot, he suddenly got out of bed and made about a quarter of a pint of lemon coloured urine with ease. This he could look at, in a black earthen vessel, without any emotion; but upon its being shewn to him in a glass, his convulsions were instantly excited.

About two o'clock, he repeated his medicine again with less hesitation, and with much less difficulty than the former. He could now view the meadows at some distance, which were covered with water, without

* If the reader is disappointed at not finding the warm Bath amongst the above remedies, I can tell him, this was not forgot; on the contrary, it was kept constantly in readiness; but the sight or touch of all fluids increased or renewed his symptoms to so great a degree, that on this motive it was refrained from: and under some expectation of gaining by other means, such an alleviation of his symptoms, as might allow of his going into the Bath without that dreadful perturbation, which I was anxious to prevent.

without those miserable feelings he had hitherto been tormented with. He was more comfortable to himself, and with tolerable ease got down some half dozen mouthfuls of bread and butter. After this he made a new attempt to swallow water; first looking at it, and without those painful agitations recurring with so much violence as before. Having thrown a portion of this hastily into his mouth, he squeezed his lips together with his fingers; and by a determined effort gained his point. But this cost him so much trouble and pain, as to prevent his engaging in a second attempt at that time.

The boiling heat in his stomach, which had occasioned so much uneasiness in the morning, he now scarcely felt. This he said, had sensibly declined since the application of the ointment, to which he ascribed a mitigation of all his sufferings.

At this period of his disorder it was discovered, that his urine had been forcibly expelled, as often as his spasms returned; and that the penis was always then in a state of erection. *

B

difficulty

* Veretri frequens tensio cum seminis involuntario jactu.
Gal.

A further repetition of his medicine was made at five o'clock, and this with as little difficulty as the last. Matters therefore wearing a less terrible aspect, I could not help flattering myself with hopes, that this dreadful disorder would at length be conquered by the combined powers of Musk, Opium, and Mercury. My expectation was but of short continuance; for within two hours he became more restless and fearful, frequently calling out for something to drink; and talking much and loud; however he became calm, upon being reproved mildly. Small-beer was his favourite liquor: he was therefore indulged with some pieces of bread soaked in this fluid; but these he could not swallow with the same facility as before. Beer was his constant theme. Being desirous therefore of gratifying him in this regard, as well as of trying whether a concealment of the liquor would not obviate many of the difficulties which had always accompanied his attempt to drink; some small-beer was put into a phial covered with flannel;

Cæl. Aurel. de Hydrophob. Cap. XI.—This was a symptom, and a very troublesome one, in Dr. Fothergill's patient.

flannel; * and a tube was prepared; thro' which he was to suck it. The effect was the same as when given to him without disguise. The moment it touched the fauces, that instant were his spasms renewed with all the violence he had ever experienced.

At eight o'clock in the evening, his medicine was again repeated; but with more reluctance and trouble than upon either of the two former occasions. At nine o'clock, all his symptoms were manifestly encreased. His countenance was fiercer: he was constantly spitting out large flakes of frothy saliva: he became more ungovernable; frequently getting out of bed; was incessantly calling for drink; yet shewed no disposition to bite, or assault any body. A new symptom had also now made its appearance, which in other diseases is found to be of the most dangerous import: I mean a perpetual plucking of the blankets and bed-cloaths.

B 2 **An**
 * Dandus interia potus in fictili vasculo, subtili caverno perforato, tanquam sunt papillae uberum; et dandus agrotantibus, praefecto obstaculo oculorum. *Calius Aesclan: de Hydrophob: Cap; 16.*

An increase of difficulty attended the exhibition of five grains of opium, without Musk or the Turbith Mineral. Another ounce of the Mercurial Ointment was rubbed upon the shoulders, and half an ounce of Tinct. Theb. mixed with six ounces of mutton broth, was injected into the intestines; but neither these means separately, nor in conjunction, were sufficient to check the further progress of his disease.

At eleven o'clock the general perturbation was become excessive. He began to ramble; but this was stopped for a time, by talking to him, and by engaging his attention. He had frequently regurgitations from the stomach; but no vomiting. The saliva became more viscid, and adhering tenaciously to the fauces, occasioned (but in a slighter degree) the same symptoms that an attempt to swallow any liquid excited.

I was willing to hope, that by thus hastily introducing a large quantity of Mercury into the system, a ptyalism would be procured; and that a change in the state of the fauces so induced, would destroy that morbid sensibility of these parts to which so much of his disease might be attributed; whilst from its general action upon the frame, some salutary effects would be obtained. I was in both respects disappointed.

excited. He had also all his complaints aggravated, by the improper conduct of his attendants; who prompted by their fears, had almost persuaded themselves, that the opinion universally received by the common people, of smothering such unfortunate objects, was not only justifiable but expedient: * for I found them confining the poor creature under the bed-clothes; by the united force of half a dozen strong assistants; whose countenances bespoke the the terrible apprehension they were under. He was instantly set at liberty, when it was discovered that his arm had bled again: his face was flushed: he panted quick, and was in a profuse sweat.

Being sensible of the ill treatment he had received, he became suspicious of his attendants,

* Tulpus, who was aware of this opinion prevailing in Holland, has the following passage in speaking of a patient, under the Hydrophobia. *Adeo ut opus non fuerit, nec huic nec aliis ægris (quos equidem vidi satis frequentes) mortem maturare, sive per Stragulam sive per Culcitram ori (ut loquitur vulgus) impostam, quippe pereunt per se satis celeriter: ut pote raro superstes, cum aquæ formidine in diem vel tertiam, vel quartam; quibus addo, quod neminem habuimus, vel audiverim latrare, vel viderim mordere, necdum cuiquam detrimentum fuisse rabidærum sputa. Tulpii Observ. Lib. 1mo. Cap. XX.*

tendants, and less attentive to my instructions. Stern reprehension of those who had thus behaved, and mild persuasion employed with him; soon produced tranquility and compliance with my directions. I had however scarce left the room before a loud scream bespoke some unexpected change. Upon turning my head to discover what this meant, the boy was at my shoulder; having suddenly quitted his bed with an intention to follow me. To this he immediately returned at my request, without having shewn the least inclination to bite, or betraying any thing further than an ill opinion of those by whom he had been so improperly treated.

Seeing of how little avail all my endeavours had hitherto proved, I was determined to try if a larger dose of *Opium* would not throw him into an opposite state, and make him exchange his inquietude for stupor: for unless some stop was put to the increase of his disease, evident it was, death must inevitably soon follow. A larger quantity of *Extr. Thebaic.* was accordingly given to him with some difficulty: but without succeeding in the intention.

From

From this time until a little before two o'clock in the morning (his strength being much impaired) his inquietude was somewhat abated. He often started, but was less disposed to talk.

He complained of a very offensive smell from the wound, which had not undergone any change since the commencement of the Hydrophobia : nor was any-body but himself sensible of fætor issuing from it.

About two o'clock his eyes had lost their fierce frightening appearance, and were more fixed. He had some intervals of rest ; but soon after, his hands and feet were cold, and his pulse intermitted and became irregular. A violent convulsion succeeded ; and this was followed by a copious discharge of frothy saliva from the fauces ; which occasioned a sudden strangulation, and was near closing the scene ; but by the industry of his attendants, this was removed : and altho' he was insensible to any ordinary occurrence, yet by his behaviour he seemed to acknowledge their assistance in this regard with thankfulness. When to appearance he had ceased to breathe, the *Spasmus Cynicus* was observable,

ble, with an odd convulsive motion in the muscles of the face; and the strange contrariety which took place in the action of these, produced the most horrid assemblage of features that can well be conceived.

It was remarkable, that in the last hours of his life, he ceased to call for drink, which had been his constant request; but was perpetually asking for something to eat. In this manner he died, giving me an opportunity of examining those parts after death, which were in such sufferance whilst he was living.

Upon laying bare the abdominal muscles, these preserved the same colour they have in the healthiest subject; not being altered in the least degree either by the disease, or from the repeated blows he had given himself. The skin indeed was black at the *Scrobiculus Cordis*, and there was a slight fissure upon the part, which had so repeatedly and forcibly been struck; but this extended no further than the *Cutis*. -- All the viscera of the abdomen were in a perfect sound state, neither discoloured, nor preternaturally distended with blood.

The

The stomach was free from every inflammatory appearance ; and contained about half a pint of a semi-fluid, consisting in part of the food he had taken, (little or none of which had passed the lower orifice of the stomach) and in part of the medicine he had been using, as the smell very fully evinced.

The liver was entirely free from disease : its substance was neither distended with blood, nor the *Vesica Fellea* with bile : the latter was about half full, and contained also a portion of air.-----The intestines, both small and great, were empty ; and the rectum without faeces. The contents of the *Thorax* yielded no more information, than those of the lower belly, being quite untainted with disease.

Having met with so little instruction from my enquiry hitherto, I was willing to expect that an examination of those parts, which were so much affected under the disorder, in the life-time of the patient, would now afford some light in my endeavours to investigate this curious disease. The *Diaphragm* was therefore first exposed : but this had not undergone the least change

nor deviation, from what is observed in the most healthy subject. The *Oesophagus* was next examined after being divided its whole length ; but no vestige of inflammation was here to be met with ; nor upon the *Velum Pendulum Palati*, nor did the whole circumference of the *internal fauces*, nor the superior part of the *larynx* and *pharynx*, nor the *glottis*, betray an appearance that could in any degree be considered, as bearing a morbid aspect.

Here my enquiry stopped, as I could not suppose an inspection of the brain was likely to give any more information than I had hitherto acquired.

C A S E the Second.

IN the year 1775, a second Case of the Hydrophobia occurred to me, the particulars of which the reader will find in the following narrative.

A young Farmer, aged 25 years, of a thin habit, and used to the most laborious kind of employment in husbandry, was bit in the month of September by a mad-dog ; a slight wound was made by the animal in the fore-finger of the left-hand, about mid-day on Wednesday. On the Tuesday following, the moon being at the full, he went to the sea, and was dipped as much, and for as long a time, as is usually practised at those places : drinking afterwards upon the spot, sea-water as a purge ; which operated briskly. The wound at first bled freely, and was made to do so more than once by his occupation in the field ; which at that season of the year, was gathering beans. It healed whilst at the salt-water, and never afterwards gave him the least trouble.

On

On Tuesday the sixth of June following in the afternoon, he for the first time felt a pain in that hand and arm, which he attributed to some slight injury the limb had sustained in the course of his employment; supposing that this had brought on the rheumatism, a disorder to which he had been heretofore subject. On this motive he was induced to bathe in a river the same evening; which he did without hesitation or inconvenience. On the Wednesday morning, after passing a sleepless night, he complained of being sick, but went to his ordinary engagement in the field; first eating some bread and butter, and drinking tea without reluctance or experiencing any uneasiness. In the course of the day he several times drank draughts of different liquids to allay his thirst, which was troublesome. In the evening, he was seized with a vomiting, which continued the whole night, and until eleven o'clock on Thursday; every thing coming up as soon as taken. His vomiting ceased about that time, but was succeeded not only by an aversion to liquids, but even the sight of them affected him much. In this state I found him, and from his eyes alone, before

fore I had asked any questions, was entirely satisfied of the presence of the Hydrophobia. He complained much of a heat ascending from the stomach to the fauces: the latter were also loaded with a viscid frothy phlegm, which he was perpetually spitting * out in large white flakes; and with a strong effort. He every now and then started suddenly from the chair in which he sat, (for he could not bear a horizontal position) complaining at the same time of being almost suffocated; and of his feeling an exquisite pain under the *Cartilago Ensiformis*, to which (in the same manner as the boy did) he instantly with force applied his hand, as often as his spasms returned. He was extremely desirous of cold air, which never failed to renew all his painful symptoms; as did a wet napkin applied to the throat. I now asked him to wash his mouth, with cold water, in order to

* I was sorry afterwards I did not inoculate a dog with this saliva. It would not only have been satisfactory to have returned the poison from the human frame to the dog; but a failure in this point might have led to a useful fact, viz. that those who are engaged in offices about the person of one labouring under the Hydrophobia, have nothing to fear from the saliva; a contrary apprehension is universally entertained, notwithstanding the information which *Tulpus* has given on this head, and which the reader will find in a former citation.

to remove the viscid phlegm which was so troublesome to him, as well as to observe what effect it would have. To this with some reluctance he consented: but the moment a glass of water was placed before him, his spasms were immediately excited with great violence; whilst the *Rifus Sardonius* occupied the muscles of the face. A further attempt was made with his eyes shut, but the same horrid symptoms were produced. Solids had not quite the same effect: He could chew bread; but seemed very attentive in keeping it from touching the back part of the fauces; and whenever he attempted to swallow it, the same symptoms were brought on that ensued from his seeing water; (but in a less degree,) until he had got the substance into the Oesophagus, when it was transmitted to the stomach without difficulty. Humanity forbade a further repetition of these trials. His countenance bespoke the greatest distress; his eyes expressed a mixture of fear and fierceness, which I mentioned before as being peculiar to the *Hydrophobia*. The pupil was as much dilated as in the most compleat *Amaurosis*; but the colour of the iris was not changed, as was observable.

vable in the boy whose case I have before related. The skin was cool; the pulse slow and feeble: he was frequently troubled with eructations; but these afforded him no relief. He had no difficulty in making water, which he had passed at intervals, in small quantities. His respiration was free and equal, excepting when those interruptions occurred from cold air, the sight of any liquid, or from the *fauces* being touched with the latter. His intellects were clear; and he felt no pain he said, but that under the *Cartilago Ensisformis*; which never failed to aggravate in a most acute degree, all his other sufferings.

He was conscious to himself of the hasty increase of all his symptoms, was aware of the danger of his situation, and seemed much disappointed at my not bringing with me, a medicine that might prevent a return of his pain; declaring he could not live unless I could give him very speedy relief.

He made no objection to going into the *Warm Bath*, which was prepared for him immediately; nor to a *purgative Clyster*, which was to be injected upon his coming out

out of the water. A stool having been procured by these means, a second was to be thrown up ; consisting of four ounces of oil, with half an ounce of *Tinct. Thebaic.* Four drams of *Ung. Cærul. fort.* were to be rubbed upon the fauces, and the part to be covered afterwards with the *Cataplasma e Cymino* ; to which was added, half an ounce of the *Theban extract.*

An embrocation was directed to be applied to the region of the stomach, with continued friction ; consisting of the following articles,--half an ounce of *Spt. Sal. Ammon.* ten drams of *Olive Oil*, six drams of *Oil of Amber*, and ten drams of *Laudanum* : strong *Mercurial Ointment*, to the amount of two ounces, was also to be rubbed by the hand of an assistant, guarded with a bladder; upon the shoulders and back ; and as a further means of kindling a *Ptyalism* speedily, he was to receive the *Jmoak of Cinnabar* into the mouth, by throwing a drachm of that substance now and then upon a hot iron.

In aid to these external means the following bolus was directed to be prepared, and to be taken every four hours :

R

R. *Mosch. Opt. gr. quindecim*
Merc. Emet. flav. gr. tria
Extr. Thebaic. gr. quatuor
Syr. Simp. q. s. ut. ft. bolus mollis.

It was with concern I could observe a manifest increase of his disorder whilst I sat with him, and this to so great a degree as to preclude any expectation of his surviving many hours.

He felt himself easier whilst in the *warm Bath* as also under the application of the *Ointment*; but was released by death from his state of misery, about ten o'clock that night: nor in this case did the *wound* undergo the least *change* either before or after the appearance of the *Hydrophobia*; but healed without any difficulty and remained so at the time of his death.

C A S E the Third.

IN the afternoon of the 29th of August in the present year 1778, I was desired to see a boy eight years old, who was said to labour under the *Hydrophobia*. I found him surrounded by a number of people, whose curiosity had led them to become spectators of so extraordinary a disease. He was sitting in a chair with his countenance composed; his eyes, which were naturally of a black colour, fixed; but without that fierce appearance I have before remarked, as being peculiar to the *Hydrophobus*. The account which he and his friends gave me was as follows: That about a month since he had been bit on the wrist by a *Cat*, in a field adjoining to the town, of which the marks remained, but without any ulcer, or even the smallest appearance of inflammation: that about the middle of the day before I saw him he began to complain of pain in the part bitten, which ascended up the arm and affected the temple on that side;

side; soon after which he swallowed liquids with reluctance and difficulty. Upon producing a cup of water he turned from it immediately under great perturbation, with a painful sobbing, similar to that which follows a gradual immersion of the body in cold water. Upon my attempting to apply a wet cloth to his throat, he resisted with all his strength, and by his excessive agitation seemed to have his painful feelings much aggravated. When undisturbed by any of the above offending causes, his respiration was free and equal, excepting that he sighed very often. His pulse was feeble, irregular, and intermitting: there was no preternatural heat upon his skin: he had no thirst: his intellects were clear; and he gave to all my questions immediate pertinent answers, in a plaintive tone of voice, which seemed to bespeak a consciousness of his situation, and which did not fail to impress every one present in the fullest manner with pity for his sufferings. Indeed in every case that I have seen, the patient conveyed his information clearly and earnestly; and whatever he wanted to obtain; whether to have some disagreeable object removed, or some request granted,

it was implored in the most piteous manner. This was particularly observable in the poor child who is the subject of this narrative, during the whole course of the disorder.

A warm Bath was immediately prepared for him, the sight of which occasioned some commotion, and produced marks of disgust and fear : these were overcome by persuasion, and he was placed in it. The moment he touched the water his painful sobbing and disgust to it were increased : these subsided in a few seconds, and he then told me he felt easier ; but it was observable that these symptoms were renewed as often as a fresh surface was touched by the water. He was kept in the Bath near three quarters of an hour, during which time he frequently said that he felt less annoyance from his disorder. Upon quitting it a plaister (of which Sacc. Saturni made the basis) was applied to the throat, and I had now to lament, that neither from the former cases which had been treated by me, nor from that republished by Dr. *Fothergill*, was any thing to be collected, which might carry even a probability with it of subduing a disease most terrible in its first

first appearance, in its progress, and in its termination. Not however to follow the same line (powerful as it was) which I had before pursued, the *Metalline Antispasmodics*, of late introduced into the *Materia Medica*, were the medicines I purposed to adopt in the present instance ; but not with much hope, I confess, of subduing this terrible disease. A composition of the following kind was formed :

R. *Flor. Zinci granum unum.*
Cupr. Ammoniac. semigranum.
Mosch. Opt. grana decem.
Syr. Simp. q. s. ut fiant pillulae duae
molles; sumanter hora tertia vel quarta
quaque.

A Liniment, consisting of 3 drams of the stronger Mercurial Ointment, with the same quantity of Oil of Amber, was to be rubbed upon the shoulders and back ; and a Clyster, made of five ounces of fresh broth, with thirty drops of Laudanum, was to be injected soon after his going to bed, which he did immediately upon his quitting the Bath. To these remedies was added a Medical Atmosphere, made by burning Gum Ammonicum, in his room,
 from

from which in some spasmodick diseases I had seen a good effect.

Between nine and ten o'clock this night he took some bits of bread soaked in milk, but with difficulty: he sighed more, and and often started up in bed.

At eleven o'clock his pills were repeated; the sight of which at first disturbed him, as did every thing that came suddenly upon him; but having crammed them as far back in the fauces as he could reach, they were swallowed with little or no difficulty.

About twelve o'clock he became more restless; his face was flushed; he frequently started; complained he could not lie down, and that the weight of the bed-cleaths was too much for him. He likewise in the course of the last hour became more talkative, and I could manifestly see an approaching delirium. The warm Bath was immediately provided, after which a Broth Clyster with a dram of Tinct. Thebaic, was to be injected, and the Mercurial Liniment * was ordered to be repeated.

* The Mercurial Liniment in this case did not shew the same sedative quality during the time of rubbing, as was observed in a former case.

repeated. He continued in the warm bath near two hours, feeling himself much more comfortable the whole time; but the same inconvenience accrued as before whenever a fresh surface was touched by the water. Between two and three o'clock in the morning his restlessness was still greater; his eyes had acquired a fierce appearance; he often sighed deeply; was continually talking,--and every symptom seemed to be upon the increase.

Both his Clysters had come away directly, the latter bringing with it some hardened faeces. He now complained of being cold, and wanted to sit by the fire; but at the same time could not bear the bed-cloaths upon him: in this state his intellectual faculties seemed quickened by disease. Each dose of his pills were directed to contain two grains of *Cupr. Ammon.* the same quantity of Theban Extract, three grains of *Flor. Zinci*, with ten grains of *Asa Foetida*, which was substituted for the Musk; whilst a solution of that foetid Gum, with a dram of Tinct. Thebaic, was administered as a Clyster. The above pills, tho' repeated every four hours,

hours, afforded not the smallest relief; nor did they shew the least action upon the frame.

At eight o'clock in the morning he expressed a strong desire of going into the warm Bath again. This was complied with, a temperate one of *Milk * and Water* being speedily prepared. The sight of it affected him somewhat, but he entered it without hesitation; and altho' the heat (as I have before observed) was temperate, yet he complained much of its being too hot; frequently starting from it into an erect posture. In a quarter of an hour he was weary of it, and desired to be taken out.

He had from the commencement of the Hydrophobia, as had the other patients whose cases I have related, constantly pointed to the *Scrobiculus Cordis*, as the principal

The alteration of the Bath to Milk and Water, was made in conformity to Dr. Fothergill's proposal, of supporting by food the *Vita Vita*; the quantity absorbed by the whole surface of the body in a given time, being very considerable; *Hydrophobi* however do not sink for want of food, but the effect of the Canine Poison upon the *Brain and Nervous System* is so forcible, that nothing at present known seems sufficient to counteract it. All those I have seen, have taken food quite sufficient to support the system for a much longer time than the disease requires to finish its course.

principal seat of his misery, and which in this poor child extended from thence down the Recti Muscles. As there was some little fullness in the bowels, a purgative clyster was thought proper to remove this, which answered the purpose, in procuring a moderate stool with some flatus.

Seeing of how little avail every thing had hitherto proved, and being clearly convinced of his inevitable fate, I was at length determined to put in force the remedy which Helmont speaks of in terms so favourable, but let me add, not with much expectation that this would prove more successful than those powerful ones which hitherto, in every case, had been so fruitlessly employed. A large tub of cold water, well saturated with common salt, was made ready, into which this patient was suddenly plunged over head and ears, and there held until he ceased to struggle. He was then taken out, and the same operation again repeated, until he became so quiet, that I was apprehensive a total extinction of life would actually take place. He was then wrapt in a blanket and put to bed, where he remain-

ed more quiet than he had been any part of the preceeding night, and so continued for near two hours; not that he could at any part of this time bear the sight of liquids, or allow them to approach his mouth with less horror than he had done since the attack of his disease. He now repeated his medicine; but his excessive inquietude, which was again returned, his increasing delirium, his intermitting, feeble, irregular pulse, all these symptoms in combination, afforded a most melancholy prospect, and gave me but little hopes of his surviving many hours; nor indeed was it a circumstance I could wish for. His eyes, and whole countenance, had now a keener aspect; but it was observable there was no increase of difficulty in swallowing, as was evident from his taking five or six bits of bread soaked in milk.

At four o'clock in the afternoon* he was become more ungovernable, refusing at first to take his medicine; but neither at

* In this state I took from him, on the blade of a lancet, some saliva, with which I immediately inoculated a dog, by making a small incision through the skin on the upper part of the nose.

at this period of his disease, nor at any other, did he shew the least inclination to bite or spit, or to hurt in any manner his attendants. He talked incoherently and constantly, walking about incessantly; and this he had done for the last three hours. His pulse became immeasurably quick, and all his symptoms were visibly heightened.

At eight o'clock he swallowed some pills made of Camphire and Nitre, with two grains of Opium.

About nine o'clock a common saucerful of bread soaked in milk was brought to him, which he eat, and without more difficulty than he had all along experienced. His pulse was scarcely discernable, and tho' he complained much of heat, his skin was cold and clammy. At one o'clock his eyes seemed enlarged, and had a livid circle about them: The upper lip was covered with a frothy mucus: He would lie quiet for a few minutes, and then plunge suddenly with his feet: His breathing became irregular and laborious: He faltered in his speech; and before two o'clock the horrid catastrophe was concluded*.

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* "The Case which Dr. Watson and myself attended,
"concluded,

The body after death afforded nothing uncommon to the view. There was no alteration in the colour of the skin at the *scrobiculis cordis*, or in that which covered the *Recti Muscles*. The stomach and intestines had quite a healthy appearance; the latter were moderately distended with flatus, and the former contained near five ounces of a blackish coloured fluid, which smelt strongly of the Camphire he had taken, and probably owed its colour to the *Flor. Zinci*, &c. There was no remains of the bread and milk mixed with this. The liver and diaphragm were without the least disease: The *vesica fellea* was full of bile: The lungs afforded the same aspect they do in the healthiest subject: The heart and large blood vessels surrounding it, were not preternaturally distended with blood: The back part of the fauces, and indeed the whole internal surface was without the least mark of inflammation; and so was the *oesophagus* upon being divided its whole length.

The

“concluded like all the instances of the genuine Hydrophobia on record, fatally.” *Vid. Dr. Fothergill's Case of the Hydrophobia republished.*

The brain gave no further information than the viscera of the chest and lower belly. If any thing, the vessels seemed rather fuller of blood than common, but it should be remembered the subject was a healthy young one, who was not under disease much more than eight and forty hours.

OBSER-

OBSERVATIONS

ON THE

HYDROPHOBIA.

FREQUENT mention is made in the writings of the ancients of the Hydrophobia ; * and the learned reader will find in their works, a long catalogue of remedies, § recommended both as prophylactics and cures for it. These however rather serve to shew the ready credulity of their authors, than to furnish us with proper means of combating the dreadful consequences which follow the bite of a mad-dog, when the human body is infected with its poison. Medical books also contain a number of cases, which have been published

* *Caelius Aurelianus* has given a good description of the disease, with his accustomed peculiarity of stile.

§ Many of these are enumerated by *Borrhaave*, in his 114th Aphorism.

published as examples of the Hydrophobia : but in respect to many of these it may be justly doubted, whether the disorder they are meant to represent, was the same with that of which I have given the above detail.

They are many of them so replete with the marvellous, or so deficient in point of accuracy, as to leave the reader in suspense as to the fact for which he consults them : but in this remark, I do not mean to comprehend some recent publications in the last volumes of the *Medical observations and enquiries* ; particularly one by the ingenious Dr. J. Fothergill *, wherein the origin, progress, and termination of the disease is marked with great precision.

It appears from the invaluable work of Morgagni, in which we see the result of a long and laborious life, spent in examining morbid bodies, and in reporting their appearances after death, that it never happened to that accurate anatomist, to meet with a subject who had fallen a martyr to the Hydrophobia ‡ ; and he is obliged to his

* *Medical Observations and Enquiries*, vol. iv.

‡ Atque ægre fero, nondum licuisse mihi, Hydrophobum, nedum plures, ut opus fuisset Hydrophobos persequere, vel quod

his correspondent for a communication on this head. It has indeed been the lot of but few physicians, who have passed even a long life in the exercise of their profession, to have seen this singular malady; and to have the advantage of correcting any erroneous opinion they might have entertained of it. The number of those is still smaller, who having been witness to it, had the opportunity, or the inclination, or both, of examining by dissection, the state of the body after death.

A notion has prevailed, that there was some danger accompanied an attendance on those miserable beings labouring under the Hydrophobia * from a belief they were strongly disposed to offer violence to every one about them. This perhaps may have

quod ejus rei copia non fieret, vel quod si fieret, tum verò quasi fato quodam gravissimis occupationibus, aut valetudine minus commoda destineret. Morgagni Lib. 1. mo. Epist. 8. vo. Art. E. E.

* Sauvages *Traité sur la rage de Chien* (to which the Academy of Toulouse adjudged their prize) I have not seen; but in his later work, the *Nosologia Methodica*, there is some account of the Hydrophobia, in which the same spirit of refinement is visible, which pervades every other part of that learned Frenchman's book. Vid. *Nosologia Methodica de Hydrophobia*.

have had its share, in withholding physicians from taking that near and satisfactory view of the disease they would otherwise have done *.

Whether to this single cause, or to a variation † in the symptoms, which may possibly be modified in some measure, by the different habit of the patient, I will not determine ; but it is certain, the diligent enquirer will too often find his industry rewarded with disappointment and dissatisfaction, upon comparing what passes in the living body, with what has been writ-

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* A close and repeated attendance, in every stage of the disease, has convinced me, that there is no foundation for such prejudice, neither of the patient's shewing the least inclination to hurt any body, nor the last when forcibly plunged into cold water and held there. Let no one, therefore, from an apprehension of danger, withhold that assistance which so dreadful a calamity calls for.

† That this actually does happen, I am much disposed to believe. In the two first cases there were some symptoms which did not occur in the latter, such as the *veretri frequens tensio*, the constant spitting of a flaky mucus, &c. and in the last instance the perturbation towards the end of the disease was greater. The little boy walked incessantly for three hours under violent agitation ; the identity of symptoms nevertheless which characterize the Hydrophobia, are so singular and invariable, as will at all times serve to distinguish it from every other disease.

ten on the subject. He will frequently meet with a tedious enumeration of symptoms, which I have been silent upon, all of them calculated to increase the fear of the spectators, such as spitting at the bystanders, barking, biting, &c. I much doubt, whether these circumstances ever did happen. They are certainly not constant attendants; and I am rather disposed to believe, that some things bearing a remote resemblance to these extraordinary appearances, have been magnified, by the fears of the spectator, into such terrifying enormities.

The humane pathologist will with pain contemplate the action of the canine poison upon the human frame; from the commencement of the dread of liquids (as it is called) to the final termination of the disease.

It cannot have escaped the reader's attention that in the two first cases, the disorder began with evident signs of the stomach's being affected *. In the boy, a
boiling

† It appeared upon dissection, that the contents of Nourse's stomach were nearly equal to the whole of what he had taken during

boiling heat in that organ troubled him much. In the man, a vomiting immediately preceded the complaint. The stomach was not long in sufferance alone: the fauces speedily partook of the malady, and soon after the *Aquæ Pavor* made its appearance.

It is very generally believed that a considerable difficulty in swallowing is joined to the dread of water; and that the *Oesophagus* with the muscles subservient to deglutition are specially concerned in this disease. The attentive observer will find the matter misrepresented: the principal foundation of the evil seems to rest upon a *morbid sensibility* both of the *external* and *internal fauces*. For the sight of a liquid, or the application of any substance to the internal fauces, but more especially of a fluid, instantly excites the most painful feelings. Nay, the same symptoms are produced by touching the *external fauces*,

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with

during the last 24 hours preceding his death. The *stomach* had therefore either lost that contractile power, by which its contents are propelled into the *duodenum*; or what is I think more probable, there was a stricture upon the lower orifice of that organ which opposed the exit of its contents.

with a fluid *, or by the contact of cold air with these parts ; and nearly in as great a degree. But a solid or a fluid substance being conveyed into the Oesophagus ; the transit into the stomach is accomplished with little or no impediment : so that in fact the difficulty is surmounted, before the patient is engaged in the action of swallowing.

Nor is the excruciating pain which never fails to be the companion of every attempt to drink, felt in the *fauces* and *throat* : it is at the *scrobiculus cordis*, to which the sufferer applies his hand ; whilst a kind of sobbing interrupted respiration is observable, somewhat resembling that which a gradual immersion of the feet in very cold water occasions ; but in a much greater degree. The countenance is at the same time distorted with the *risus sardonius*. The muscles of the abdomen are forcibly contracted,

* The increased sensibility is not confined to the internal and external fauces, but the *cutaneous nerves*, upon the whole surface of the body, also have it in a highly morbid degree ; for in the last patient his interrupted sobbing respiration with pain at the *scrobiculus cordis*, was renewed, as often as a fresh part was touched by the undulatory motion of the warm water.

tracted, and a sense of suffocation seems to threaten the patient with immediate death. From the presence of the *risus sardonius*, from the short interrupted manner of breathing, from his pointing constantly to the *scrobiculus cordis*, and from the exquisite torture returning with so much vehemence, I was led to believe, that in the *Hydrophobia* a new *sympathy* was established between the *fauces* and the *diaphragm*; that the latter was drawn into a most severe *spasm* as often as any offending cause operated upon the former: and that the *abdominal muscles* were in the same manner affected is clearly evinced, by the contents of the *urinary bladder* being at the same time forcibly expelled. Future observation will confirm or refute this opinion: in the interim it may not be amiss in those to whom the *Hydrophobia* may occur, to direct their endeavours towards diminishing that *morbid sensibility* above-mentioned: which seems to give rise to so much mischief.

Amongst many other singularities to which the bite of a mad-dog gives rise, is the action of the poison upon the part to which it is applied; and by which it distinguishes

stinguishes itself from every other animal or vegetable poison that I at present recollect. For neither extraordinary inflammation, nor any other circumstance which marks its violence, is here discernible. Nor can the progress it makes towards an admission into the system be discovered by diseased lymphaticks, betwixt the wound and the next conglobate gland; or what is more common in the gland itself. Evident tokens betray the action of other poisons on a part denuded of its cuticular covering. In inoculating with the *virus* of the small-pox; the cuticle being first separated, a small particle of variolous matter is placed in contact with the part thus deprived of its defence. An inflammation is raised within a certain time, and an *ulcer* follows. A portion of matter which this *ulcer* furnishes is absorbed; passes into the circulating blood; raises a fever, and produces the same disease with that which furnished the virus.

When the *Venereal Poison* is applied to the human frame, the external part exposed to its action is very generally first affected, and afterwards the circulating fluids, which

which deposite the assimilating *Leven* upon particular parts, with symptoms peculiar to that disease.

The bite of the *Viper* also occasions *pain* and *inflammation*, which are propagated along the limb that has been wounded.

When a wound, however slight, is made by an arrow, or any other weapon armed with the *Woorara**, or *Lamas*, or *Ticunas* poison, the first action is upon the wounded part; and immediately in quick succession, its deleterious effects are communicated to the common sensory, and to the whole frame; and speedy death is the consequence. A different process is observable when the Canine poison shews its baneful affects. The wound heals of itself, or under the most simple means; and without difficulty, The limb on which the wound was inflicted †, is scarcely more affected

* See Bankart's History of Guiana.

† It must not however be disguised, that in two of the cases I have related, pain in the limb bitten was amongst the first symptoms which preceded the Hydrophobia; and in the other, where the cheek was wounded, pain and tightness about the temples accompanied the commencement of the disorder: but in neither of the examples, did the wounded part or scars undergo any change.

affected than any other part of the body; and when the Hydrophobia appears, as well as during its continuance, even to the last moment of the patient's life, we have seen it continue unchanged*, notwithstanding what has been said by some writers on this subject. Nor is there any evidence, so far as the obvious qualities of the blood may be trusted, of that fluid being altered, or acted upon by it. Nor do the *Lymphaticks*, nor the next *conglobate Glands*, betwixt the part wounded and the heart, shew any signs of disease.

The distance of time also from the bite, to the appearance of the Hydrophobia, is different and † uncertain. In the boy whose case I have related, it was a month; in Dr Fothergill's patient it was three months;

* *Frequenter notavi caput ejus versus partem dextram, ubi latus fuit a Cane, fuisse convulsus, in qua a Cicatrice facti insigni existit morsus vestigium; adeo autem ab omni dolore liberum, ut plane istius morsus oblitus esset, prius quam a disquisitione a me facta, nunquid aliquid tale accidisset, istius recordatione animum ejus perfricasse.* Ridley's Observ. P. 111.

† How this variation of time in the appearance of the Hydrophobia, is to be accounted for, I know not. Poisons which are supposed to act upon the circulating fluids, are more manifest and speedy in their operation.

months; in Dr Dickson's it was four months*, and in the man it was nine months.

We are then, I believe, to seek for its action, solely in the Nervous System †, whose

* Vide *Med. Observ. and Enquiries*, vol. III.

† The action of the Canine poison seems confined to this part of our frame; insomuch, that it may be doubted whether the qualities of the blood are altered by it. It is not my intention here, to enter upon an enquiry how far the properties which this fluid has in circulation may be imparted to the several secretions: nor to speak of that wonderful faculty, which the various organs in the human body destin'd to this purpose possess. The power which the living body enjoys, of preparing such a diversity of fluids from the same common mass, notwithstanding all the improvements which modern physiology can boast, still remains a mystery that must attract our admiration. It is sufficient for my purpose, that the saliva of the Hydrophobus has been suspected to contain a highly noxious quality, of which the breath of the patient is supposed to partake. It is possible this opinion may be well founded, but with the reader's permission I will mention a fact or two which seem to militate against it, whilst at the same time I freely acknowledge the insufficiency of a single experiment to ascertain any philosophical truth, and much less so where the interest of the community is involved in the decision.

I never was of opinion that the Hydrophobia was a disease so highly contagious as to be propagated by the breath of the patient, and therefore have at all times without apprehension visited those who have come under my care. The example was of use in removing fears which the attendants had, especially in the first instance of the disease, which occurred to me: It is the duty of humanity to destroy such pre-

whose laws, altho' we are somewhat better acquainted with than we were fifty years ago, yet a much larger share of knowledge is requisite, in this respect, before a probable explanation of the several Phenomena attendant on the bite of the mad-dog, can be attempted*. At present it may suffice to say, that the poison of the dog, or other mad animal, acts upon the nerves, by impairing and disturbing their influence; and this at length increases to so great a degree, as to speedily end in a total extinction of the vital principle.

It has been hitherto a matter undetermined I think, how far the Hydrophobia was to be considered as an inflammatory disease;

judices as soon as may be. I know not who would be brought to attend the disease, were this opinion of its contagious nature to be admitted. A nurse who was constantly with the child, who very often kissed it, and who repeatedly received its breath upon her face and mouth, has not experienced the least ill effect from it. Two months are now elapsed, since the dog was inoculated with saliva taken from the last patient; he continues at this time quite free from disease: If at a future period any evil should result from the former, or the rabies should appear in the latter, I shall think it a duty incumbent on me to inform the public of it.

* The reader will see an attempt made to explain the action of this poison, in Dr. Mead's celebrated Treatise on the subject, but not a satisfactory one.

disease ; or at least connected with an inflammation of those parts * more particularly concerned ; and in general *bleeding* † with the Antiphlogistic method has been employed.

The want of firmness in the pulse, the evident diminution of vital energy, with those spasms that present themselves to the notice of the Physician, will, I think, remove any doubts he may entertain as to what class of diseases it belongs. I do not hesitate in placing it amongst the truly spastick ones ; undisguised by that mixture of symptoms, which may sometimes mislead a cautious practitioner.

Nor should I consider an inflammatory discolouration of the fauces (should this

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ever

* *Mordendi desiderium, in a Cane rabido morsus, magni nominis medicus, referebat ad inflammationem faucium, et conjunxam Anginae speciem ; sed aperta aliquoties cadavera, nulla inflammationis vestigia apparere. Bonet. Sepulc. Anat. P. 188. Observ. 10.*

† It is true Dr Fohergill remarks, that there was an *inflammatory density of the blood* in his patient, which induced him to order a second quantity to be drawn. This, however, is an equivocal sign of the presence of inflammation, or even a tendency to it in the attack of a disease, and cannot therefore be admitted as decisive in any respect. See *Dr Fohergill's paper on the Hydrophobia. Med. Observ. and Enquiries, vol. iv.*

ever occur) in any other light than as an accidental adjunct; not of importance sufficient to induce the Physician to swerve from that line of treatment which a genuine spasmodick affection requires.

The confidence with which medicines have been recommended to the public, as effectual in the cure of this dreadful disorder, did at first, I confess, fill me with expectation that it might be checked in its progress, and at length finally subdued. In this I was deceived. A medical treatment more suited to the end in view than any we are yet acquainted with, is devoutly to be wished for, of sufficient efficacy to controul a disease, amongst the most acute, and I believe the most deadly, to which mankind is exposed *.

It

* *Rare vel nunquam quartum diem excedit hic morbus, computando imprimis a fine primi gradus.* Van Swieten's Comment, tom. 3, p. 558.

Neque Asclepiadis Sectatores intelligibile quiddam afferunt, qui propterea passionem tardam putant, quia post plurimum tempus morsus insidit, acri morte afficiuntur. Cum non oporteat illud tempus aegrotanti imputari, quo nondum rabie vexatur, quippe cum necdum corpus afficiat: et quam emicuerit non habet superpositiones seu dilationes, sicut qui specialiter tardis afficiuntur passionibus, et ab hoc celerrime aegrotantes interficiat non solum

It is not a pleasing task, to adduce to the public another example of the failure of a medicine, which, as a Prophylactick and cure, has been possessed of its good opinion,

solum ut acuta sed etiam ut continua passio. Cæl. Aurel. de Hydroph. Cap. 11.

Quum à nata Medicina hucusque, omnes fere Artis Príncipes æplorent demorsorum Prophylaxin, vix uliam certam haberi; et jam aquam parentium sanatorum, exemplum dari certa fide nullum. Boerhave's Aphor. de cognosc. et curand. morb. Aphor. 1139.

The learned Commentator on Boerhave's Aphorisms, seem, to have no doubt of the Hydrophobia having been cured, and relates the following story, which the reader will think of as he pleases. I cannot however refrain from expressing a wish that the disease had been more satisfactorily identified than it is.

Helmontius *oculatum testem se profitetur.* Vidit enim transeuntem novem, et in illa senem nudum, funibus vinctum, habentem pondus pedibus affixum: Zona sub axillis transeunte alligatus erat Antennæ: à cane autem Rabido demorsus senex ille jam erat Hydrophobus. Credebat Helmontius, quod miserum suffocare sub aquis in animo haberent, ne propagaretur contagium: at Nauta audacter promittebat senem post reditum sanum. Pretio impetravit Helmontius, ut socius et testis esset hujus curationis; viditque quod senem in altum prius sublatum in mare præcipitem dederint, et sub aquis retinuerint tanto tempore, quo Psalmus Miserere recitari potuisset. Postea ad huc binis vicibus submerferunt, sed non tam diu: dumque mortuum suspicaretur Helmontius, solutis vinculis cepit aquam marinam, quam haurerat vomere, et revixit, postea rabie liber. Testabatur autem Nauta, omnes Hydrophobos sic sanari posse. Van Swieten's Comment. Tom. 3d. Page 559.

The Unicum remedium of Celsus is a remedy of the same kind. *Vide Anc. Corn. Celsus Lib. 5. Cap. xxvii.*

pinion, and of unshaken reputation ; but truth demands it.---The danger of acquiescing under an exhibition of the *Ormskirk Medicine*, is now evident, and will, I hope, create a due degree of caution in those, to whom they who are so unfortunate as to be bit by a mad animal, may commit themselves.

Of the great variety of remedies which have had their day of reputation, there is not one which has not possessed the credit, some time or other, of preventing the noxious effects arising from the bite of a mad-dog.

A more adequate experience has with all of them discovered the deception. Of between twenty and thirty persons * who were bit by the dog which gave the fatal wound to the poor boy, not one felt the least ill effect but himself ; and I find upon enquiry, this has frequently been the case.

* In the contemplation of so dreadful a disease, there is some comfort derived from knowing that the *Hydrophobia* is by no means the inevitable consequence of being bit by a mad animal ; the chance is in favor of the persons not feeling any bad effect from the bite, altho' no means, by way of prevention, are employed ; as must appear from the fact above-mentioned.

case. In the above number were some who took the Ormskirk Medicine; others went to the salt water; and a part of them made use of no remedy; yet these fared equally well with the most attentive to their injury. The same thing has often happened before; and much merit, I doubt not, has been attributed to the medicine taken, from that celebrated one, of *Sir George Cobb*, down to the *infallible* one which my good *Lady Bountiful's* Receipt-Book furnishes.

Amongst all the Prophylacticks now in use, I would recommend an application of the actual Caustery *, to the part immediately after the bite; or, what I should prefer to this, a dilatation of the wound
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* *Morgagni* supposing with *Salvius*, that the first signs of the approach of the disease were to be found in the part that was wounded, proposes to prevent its further progress by taking the piece out. *Non adeo difficilis ni partis conditio interdum obstaret, esset preservatio, vel ab imminente jam morbo, si cum primulum doloris, aut pruritus, ut etiam aliquando contigit, aliæque mutationes in sanata carne oborirentur, confestim paulo plus, de hac abscinderetur, quam olim fuerat demorsum, aut alio eadem inureretur.* I should very much doubt whether this would be of service to the patient, if the Hydrophobia had made its appearance in any degree. Pain in the limb wounded is a symptom with which the disease seems to commence. *Vid. Morgagni de Causis et Sedibus Morborum per Anatomen indigatis.*

if small, filling it with gun-powder, and setting fire to it: This would produce a laceration of the part, would secure a free and continued discharge for some time, and possibly the action of ignited gun-powder upon the poison, may have its use.

Disproportionate as the means we now possess, may be found to the cure of the Hydrophobia, I fear we must as yet be contented with them. It is not from reasoning on the viscosity of the *Canine Saliva*, or on the *acid* quality of the poison, that we are to expect any useful improvement, in the treatment of so terrible a disease, but from well authenticated Cases recorded with accuracy. Let us accumulate facts 'ere we begin to reason, and conduct this with a strict regard to the established laws of the animal œconomy. This method of improvement may be slow in its progress, but will in the end make us more intimately and usefully acquainted with the disease.

I know not any disorder to which the human race is exposed, where medicine shews so little power as in the Hydrophobia. The disease,

disorder, from its first appearance, possesses the frame so entirely, as to render it superior to the controul of the most powerful remedies which the *Materia Medica* affords, and so continues to its termination in death. Opium, tho' given with more than common freedom *, does not procure even a short suspension from those violent spasms, and excessive perturbation, with which the miserable patient is tormented; nor does it betray the least narcotic quality, when given even to the amount of half a dram for a dose. The sedative powers of the warm Bath proved greater than Opium, but did not materially affect for any time the violence of the symptoms; and after a few repetitions it ceased to have any visible action. Mercurial Ointment, which possesses in no mean degree a power of allaying inordinate contractions when applied externally, was of no avail, altho' used in an *Herculean* quantity. One of the most powerful mercurial preparations given internally,

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ternally,

* In the course of fourteen hours the first patient swallowed 57 grains of Opium, besides half an ounce of Laudanum, which was given in a Clyster, and what was applied to the throat externally. In the last Case, Opium was given by no means with a sparing hand to a child eight years old.

ternally, with those taken from other metals, musk, fetid medicines, and camphire, were found upon trial equally ineffectual in procuring the patient a respite from his increasing disease. A sudden immersion in cold water carried to an extremity, made a more manifest impression upon the malady; but no lasting or essential advantage was gained by this, forcibly as the common sensory and whole nervous system must have been acted upon by it. At present I cannot propose to myself any other plan of treatment which promises to be more successful. May accident, industry, or the wisdom of our profession speedily provide us with means more adequate to the removal of one of the greatest calamities to which mankind is exposed! I have seen enough of it to gratify all my curiosity, fully to satisfy me of the nature of the disease, and to make me sincerely wish a fourth example may not occur, until I am better prepared to meet so formidable an enemy.

OF THE
CÆSARIAN SECTION.

I SHALL preface the following detail of the *Cæsarian Section*, with some account of the poor woman's health, who was the subject of it, previous to her Pregnancy; from whence it will appear, that other causes may alter the firm texture of bones, so as to occasion a distortion, besides a *morbid softness*, of which we have some curious examples recorded.

ELIZABETH HUTCHINSON, aged forty, was in the year 1775 admitted an In-patient of the Leicester-Infirmity, having a Paralysis of the lower limbs. She was the mother of five children, all of which she had brought into the world, without any other circumstances, than the ordinary ones attendant on Labour. Since her last child,

a great deformity of the Spine had taken place, and as appeared afterwards, of the bones of the *Pelvis* also. She left the Infirmary, after a residence of six months, in many respects better for the treatment she had there received, and continued after her dismissal, to recover still more the use of her limbs. About a twelvemonth after this she found herself breeding; and went her full time without any thing occurring singular enough to deserve notice.

Upon her being seized with Labour-pains, a female *Accoucheur* was called to her assistance, who finding the *Pelvis* uncommonly small, and that the labour did not advance after two days attendance, desired some further help might be procured. Mr. *Atkinson*, a *Surgeon* of *Leicester*, was sent for; who upon examining the state of the parts, was fully satisfied that the *Pelvis* was much smaller than any he had ever met with before. He found the deformity (occasioned in part by the distortion of the last *Lumbar Vertebra*) exceedingly great; and as he then thought a separation of the *Symphysis* of the *Ossa Pubis*, but notwithstanding this, it was absolutely impossible to introduce his hand:

Nor

Nor from the uncommon narrowness of the Pelvis, could the head of the child make any progress.

In a Case so singular, and withal so dangerous, he desired to have the advantage of a consultation. Accordingly Mr. Fox, a gentleman of this town, eminently skilful in that branch of business, and of great experience, immediately went with him to the poor woman. Upon availing himself of the necessary examination, he was immediately impressed, as the former had been, with the impracticability of introducing more than two fingers, and of the very little chance there was of her being delivered; unless nature should contrive some other means of surmounting this difficulty, than their imagination could suggest: for it did not appear to either of them, that the diameter of the Pelvis, from the *Ossa Pubis* to the *Sacrum*, was more than an inch and an half, to which the distance from one *Ischium* to the other seemed to bear a pretty exact proportion. Under these circumstances they did me the honour to desire I would meet them, with the remaining part of their Brethren resident in Leicester; and by a candid
unreserved

unreserved comparison of opinion, to devise some means if possible, of assisting the poor woman; 'ere the last method, with which the Profession is acquainted, was put into execution; for the child had not made the least advance, since her labour began. The woman was wearied with fruitless pains, and her strength much reduced, notwithstanding some slumber had now and then been procured by the occasional administration of *Extr. Thebaic.* The poor object was now removed, from a dark inconvenient cold room, to a warm one in the Leicester-Infirmery. For altho' Women with Child are not allowed to lye-in there, the singularity and urgency of this case, in the opinion of every one, made a very fair exception to a general rule. She was accordingly carried in a Sedan-chair, to a warm apartment in that House.

Seven Gentlemen of the Faculty, in succession, satisfied themselves, that, notwithstanding her waters were said to have come away some days before, yet the membranes with a portion of fluid, presented themselves to the touch; all but one agreeing in the impossibility of introducing more than

than two fingers. This Gentleman expressing his hopes, that by a further delay, she might be delivered, by means which are practised daily; a respite of six hours was given her, notwithstanding the manifest decline in her strength. At the expiration of this period, the remaining portion of water came away; and in the interim, she had taken a little food, and got now and then some disturbed sleep.

The person above spoken of, after this interval, made a second attempt to introduce his hand; this put the woman to exquisite pain, and proved as ineffectual as every former one. What was now to be done? The child was alive and vigorous; the woman's strength extremely exhausted; her labour not the least advanced, from the first hour: and the Pelvis so straight, that should it be thought advisable, to risque saving the mother's life, at the expence of the child's; nobody could undertake to use an instrument with any certainty, in the space of an inch and an half; and this, in the opinion of every one, was the largest space this ill-formed Pelvis afforded.

forded. It was therefore concluded to mention to her, the extreme danger of her situation, both to herself and child; and to propose taking the latter from her, by the assistance of the *knife*; the alternative of this proposal being, in the judgement of every one, the inevitable death of both mother and child. The task of mentioning this dreadful expedient to her, was allotted to me; and I must confess, the very general want of success, when the *Cæ- sarean Section* has been performed, under every advantage that skill could afford, made it an office most unpleasing.---The poor woman, though fully apprized of the danger, readily gave her consent; and every preparation being made, and the Assistants commodiously placed, each having his share of the business allotted to him, Mr *Atkinson* began the operation, by making an incision on the left side of the Abdomen, thro' the skin, and *Adipose Membrane*; about six inches in length; the Abdominal Muscles were then divided, and afterwards the *Peritonæum*; when the *Uterus in Situ* was discovered; this was cautiously wounded, first by puncturing

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it with a lancet, and afterwards with a probe pointed knife, to the extent of four inches: Immediately the *Placenta* protruded itself; it was instantly removed, by an attentive expert assistant, when a healthy full-grown child was discovered, with its breech presented to the *Os Uteri* *. This was extracted without the least injury, in the course of a few seconds; the lips of the wounded Uterus being gently slipped over its head, with all the caution which an organ of that importance, under such an injury, demanded. The effusion of blood was inconsiderable; but a large portion of the *intestines*, much inflated, were pushed out, and gave the Assistants some trouble; their return however was entirely effected, and the operation finished, by uniting the external wound with the *quilled Suture*.

The operation was performed on Friday evening, and immediately after this, an
I anodyne

* This position of the child confirmed the propriety, and necessity of the operation, for to a Pelvis so ill formed, as to render the exit of the child impossible, was added a præternatural presentation, which could only be altered, by introducing the hand into the Uterus: How impracticable this was, has been before taken notice of.

anodyne draught, with thirty drops of *Tinct. Ibebaic* was administered; a Clyster consisting of an infusion of *Camomile Flowers*, with *Olive Oil*, was ordered to be injected in four or five hours, and the whole *Abdomen* was to be covered with scalded bran, inclosed in a flannel bag, which was to be kept there during the night.

On Saturday morning upon visiting her, I found she had passed the night without pain, and had slept a little. She had taken near a pint of *Sago*, *Panada*, and *Broth*, at different times, and this without sickness or vomiting. In the morning it was discovered, that a considerable portion of Intestine, had insinuated itself betwixt the stitches, which were three in number, and seemed when made, quite sufficient to keep the lips of the wound accurately in union; this was returned into the *Abdomen*, and two more sutures were added to retain it there. The countenance of the poor creature was ghastly; there was a general coldness over the frame, and her pulse was very feeble; she also complained much of fullness in her stomach, and of a general uneasiness;

uneasiness ; the Clyster was not yet come away ; a *Cordial Julep* was ordered, of which she was to take some spoonfuls frequently ; her room was to be kept very quiet, and bladders of warm water were to supply the place of the former *Fotus*, which from its moisture was found inconvenient ; and as a means of procuring an evacuation by the intestinal Canal, she was directed to take two drams of the *Ol. Ricini*, in some broth at intervals, until a stool or two was procured. A strict injunction was also left, that some of the before-mentioned spoon-meats, should be given in small quantity, as often as her stomach would receive them.

On Sunday morning I found she had passed the night easy, and had got a good deal of sleep : Her pulse was fuller and firmer, her respiration free, her faculties clear, there was a moderate sweat upon the skin ; the wound was sore, but not painful, excepting when she inspired deeply ; her tongue was covered with a brownish crust ; her thirst was troublesome ; she had made water twice in the night, but had no stool yet since the Operation. A

purgative Clyster was this morning injected, which was returned without bringing any stool with it; upon injecting this Clyster it was discovered that the *Sphincter Ani* had lost its contractile power, making no resistance to the admission of the pipe, nor did it retain any portion of the Clyster when injected; She had vomited near a pint and an half, of a blackish coloured fluid: since which she had taken about a pint of Caudle, made with malt liquor, and this at her own request; which remained easy upon her stomach. Half a pint of warm Oil was to be injected as a Clyster; to be kept, if possible, by artificial means, and to be repeated occasionally. She did not complain as yesterday of fullness at her stomach; had last night ten drops of *Tinct. Thebaic*, in some small Rum and Water. Fifteen drops were ordered to be taken in the evening, repeating this in an hour or two, if there should be occasion.

Monday Morn. She vomited this morning quite as much as the whole food she had taken the preceding day and night; neither the Castor Oil, nor the Clysters, had
procured

procured any stool; her pulse was irregular, feeble, and scarcely to be felt; the coldness over her whole frame was again returned; her countenance was more ghastly; every thing seemed to wear a most unpromising aspect; her intellects were perfect; she had taken Caudle freely; her Anodyne was ordered to be repeated at night; the Bladders to the Abdomen were to be continued, and a Solution of Manna was substituted for the Castor Oil, as the latter made her sick; a Clyster of broth, made of sheep's-head, was also to be injected once in eight hours, or until a stool was procured.

Tuesday Morn. Had not vomited, nor had any stool yet; continues to take her food; her pulse was more regular and firmer; her countenance less ghastly; she complained of fullness at her stomach; and had, during the course of the evening, three stools, two of which were loose. She died at three o'clock in the morning. A consequence that I believe will very generally follow such a wound of the *Uterus*, with its unavoidable *exposure* to the *air*.

Upon

Upon opening the *Abdomen*, which was very considerably increased in its bulk, from flatus in the intestines; there was no coagulated or fluid blood found in its cavity, but a quantity of dark coloured foetid matter. The Intestines were not inflamed nor diseased, excepting a small portion of the *Ilium* about the size of half-a-crown, which was of a dusky brown colour and adhered to the external wound. The *Uterus* was contracted nearly as much as it usually is, at that distance of time after delivery. The wound made in its substance, was not in the least closed. That part of it which was extended above the *Ossa Pubis*, (and from the smallness of the *Pelvis*, this was the greater portion) was of a deep dusky colour, and in a state of *sphacelus*.

The Plates annexed exhibit a most satisfactory view of the distorted incommo-
dious *Pelvis*, which gave occasion to so terrible an operation, and will render any description of the bones here unnecessary. The *Reflections on Dividing the Symphysis of the Ossa Pubis* which has been proposed under similar circumstances as a substitute for the Cæsarian Section, by M. Sigault and

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Le Roy, cannot but prove very acceptable to the intelligent reader, and it is to be hoped will prove a seasonable check (at least on this side the water) to the ardour with which those gentlemen recommend that operation.

The child was found to have an imperforated *Penis*, but this inconvenience was effectually removed, by a slight puncture with the lancet: He has since been baptized under the name of *Julius Cæsar*; is a healthy fine boy, now somewhat more than a year old, and likely to live.

To

TO DR. VAUGHAN,
at LEICESTER.

DEAR SIR,

WHEN you were pleased to send me the *pelvis* of your unhappy patient, you were desirous that it might be made as useful as possible. I look upon every thing of that kind which is given to me, as a present to the public; and consider myself as thereby called upon to serve the public with more diligence. To fulfil that duty, I have exhibited the *pelvis* at my lectures, with many others of singular conformation, both to explain that species of *mollities ossium*, and to illustrate some observations which I made upon a subject of a very interesting nature, viz. the operation newly introduced into practice, of cutting the *Symphysis* of the *Ossa Pubis*. Some time after my course of lectures was finished, it happened to be my turn, in rotation, at a quarterly meeting of physicians, to read a paper upon some medical subject. I chose that operation for my subject, because I thought at this time it might

To Dr VAUGHAN, at LEICESTER. 75

might be particularly seasonable : and for the same reason I send it to you, that, if you think it will be useful, you may publish it in the second edition of your book, which you inform me is soon to be put to the press.

Since the paper was drawn up, I have read Mr. *Le Roy's* pamphlet, which he was pleased to send me lately. This gave rise to a few additional reflections, which I have thrown into two notes.

I am, &c. &c. &c.

Sept. 10th

1778.

WILLIAM HUNTER.

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REFLECTIONS,

OCCASIONED BY A DECREE OF THE

FACULTY OF MEDICINE

at PARIS;

RELATIVE TO THE

OPERATION OF CUTTING THE

SYMPHYSIS of the OSSA PUBIS.

IN some of the most deplorable conditions to which the human body is liable, the Professors of Surgery and Midwifery have had firmness enough for the sake of saving life, to recommend operations which our very nature seems to abhor.

In such cases, the determination appears sometimes to be founded on a bare calculation of the chances for life; and the rule *remedium potius anceps, quam nullum*, is perhaps too often held out as an unerring guide.

Men of humanity, as well as of a reasoning faculty, need not be told, that in desperate

desperate cases, our judgment and practice are not to be regulated merely by the chances with respect to life. The sufferings of the patient, both in body and mind, should be fairly put into the scale, against the better chance for life. In such a trial, I have seen a patient pay a much higher price, in sufferings, than the little chance of saving life was worth.

These reflections should be especially in our mind, when we are to give an opinion in any case of the Cæsarian Section, or of cutting the *Symphysis* of the *Ossa Pubis*. And, in calculating the chances of a life to be saved, we should take care to make a just estimate of the life itself. Thus, in more advanced age, the value of it is less in proportion; it is less too, in proportion as it is to be attended with pains or infirmities, or with whatever will diminish or destroy the enjoyments of life. Existence is so nearly equal to nothing, that its real value must arise from its connection with some kind of enjoyment; and where, upon the whole, there is none, life is either worth nothing, or a positive evil.

The value of life rises likewise in proportion to the desire of life, and the dread of death. The life of the mother is, for that reason, almost of an incomparably greater value than that of an unborn child; a being which, we may suppose, has no enjoyment, and has neither a desire to live, nor fear to die. This appears to be reasonable; and experience shews it to be the dictate of nature, as well as common sense. I have lived thirty-nine years in one of the largest cities in the world, and, for the greater part of that time, in a very active station; so that numbers of dangerous cases must have come within my knowledge, and these among all ranks of mankind; yet I never, in any instance whatever, knew the life of the child put into any sort of competition with that of the mother, by the husband, or any other person.

When adventurous, bold, or dangerous opinions in the healing art, are proposed or practised by an individual, no great, or at least no extensive mischief will readily ensue. A suspicion of the author's partiality weakens his influence, and brings doubt
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and caution along with his new opinion. If it strikes a practitioner with the appearance of utility, he weighs it in his own mind, gets all the lights which he can procure, consults his most intelligent and experienced acquaintance; and after all, if he resolves to try it, still he sets about it with some hesitation or diffidence, and therefore with every precaution that he can devise.

It is time only, and a variety of experience that can finally decide upon the utility of a new practice. When once it is fairly started before the public, tho' it may meet with unreasonable opposition, if it can bear the test of general experience, it can hardly lose its ground: it may be kept down for a time; but must prevail in the end. So it has happened to the Peruvian bark, Inoculation, and many other improvements.

On the contrary, with whatever approbation a new proposal of this kind be received, and however encouraging the prospect may be, at setting out, or even after some trials; if it cannot bear the test of general experience, it must fall into disrepute;

repute, as it has actually happened to the hypogastric section for the stone in the bladder, and to a thousand pretended improvements in physic and surgery.

But, when a large body of respectable, learned and grave men, reasonably supposed to be competent judges, embrace a novelty in practice, with unbounded approbation; and by their testimony, and honours publicly conferred, give credit and splendour to an opinion, which should be put upon its trial with great circumspection, and finally judged of by much experience; a door may thereby be opened to great and irreparable mischief; by letting loose upon mankind, the most mischievous members of society, the ignorant and rash practitioners. It is giving all the encouragement and protection, which such unfeeling plunderers of the distressed could desire.

When any thing of this kind happens, it surely becomes the duty of all those who may have any influence, not to oppose, but to watch the innovation; and to check inconsiderate ardour and precipitancy: so that,

that, as far as reason and experience can guide, we may determine whether the practice which is recommended be at all advisable; and if it be, what are the particular cases that are fit, and what those that are unfit for the new practice.

Without ascertaining this distinction, a new practice, salutary and useful perhaps in a few rare cases, may very naturally, by an indiscriminate and frequent use, do much more harm than good. This sentiment will not surprize those of the profession, who know my opinion of the *Forceps*, for example, in midwifery. I admit that it may sometimes be of service, and may save either the mother or child. I have sometimes used it with advantage; and, I believe, never materially hurt a mother or child with it, because I always used it with fear and circumspection. Yet, I am clearly of opinion, from all the information which I have been able to procure, that the *Forceps* (midwifery instruments in general, I fear) upon the whole, has done more harm than good.

I am under apprehensions that the same thing may hereafter be said of the new practice of flitting the joint of the *Ossa Pubis* to make room for the passage of a child, when the Pelvis is too narrow.

To raise a popular cry against this practice, before it is well understood, would be unfair; and would be shewing an unbecoming disrespect to the ingenuity, and no doubt humane intentions of Messrs. Sigault, Camper, and Le Roy, the authors of this operation. We would only wish that it may be received with moderation and doubt; that we may advance with great caution, receive light as it comes upon us with experience; and finally, approve, or reject upon solid ground, and at as little expence to human nature as possible. If it should be adopted, it must, from the nature of the thing, be very necessary to restrain it, within proper bounds.

In the mean time, we should try to guess at its true value, and determine, as far as our present lights will permit, in what cases it promises to be of use, and in what cases it should seem pernicious.

First,

First, Let us consider its supposed advantages, as a substitute for the Cæsarian Operation; that is, with a view of saving the mother or child, when otherwise both must be lost.

Secondly, Let us judge as well as we now can, how far it may be adviseable, in some very difficult labours, with the view of saving the child; in those cases especially, for which the established practice in this country recommends the *crotchet*.

To assist our judgment upon these two important questions, we shall premise some remarks upon the nature of the operation itself, *viz.* cutting through the *Symphysis* of the *Pubis*, and forcing the bones to a certain distance from each other. I have had occasion to perform this so often upon dead bodies, that I do not apprehend I can be much mistaken on this subject.

1. It is extremely difficult to execute it with a *thick* knife, however sharp in the edge. The ligamentous and gristly substance between the bones is so incompressible, that it will hardly make room for the thicker part of the knife to follow its

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edge;

edge; but a *thin* knife goes thro' it with great ease.

2. Whoever has had a little practice, will find, that it may be executed without any danger of wounding the *Bladder* or *Urethra*; because in cutting cautiously with a thin knife, from above downwards and inwards, the instant that the whole is cut through, there is both a particular sound, which informs us that the business is done, and the two bones fly asunder to a sensible distance.

3. When the *Symphysis* is completely divided, the *Ossa Pubis* separate so little a way, that some force is necessary to produce an interval of half an inch; and upon encreasing the force, till the space of interval comes to two inches and an half, there is a continued crash, from the tearing of the ligamentous fibres at the posterior joints, viz. at the sides of the *Sacrum*. This, tho' requiring great force, is easily effected, by bringing the thighs to right angles with the trunk of the body, and pressing the knees gradually outwards and backwards. In that way, a small force has

has a great effect, because it has the advantage of a long lever, and is assisted by almost the whole weight of the lower extremities.

4. When such a violent separation of the *Ossa Pubis* has been produced, the *Sacrum* and *Ossa Innominata* remain in contact, only at their posterior parts; the ligaments that connect them at the fore part being all, more or less, torn asunder.

5. The mischief that may ensue upon cutting one joint of the *Pelvis*, and tearing the other two asunder, can be ascertained by experience only. It is proposed, that the incision at the *Pubes* shall not penetrate into the cavity of the *Abdomen*. If, by accident, that should happen, the operation would of course be very dangerous. Lacerations of tendons, ligaments, and fleshy parts, when not complicated with an external wound, generally heal up in a kindly manner, as we see in cases of the ruptured *Tendo Achillis*, dislocations, and fractures.

But, on the other hand, at the time of parturition, the body is remarkably dis-

posed to an inflammatory fever, which is always very dangerous when it rises to any height; and therefore, whatever exposes the body to considerable inflammation at that time. we may presume, must be attended with some danger. And it must likewise be remembered, that women who are exceedingly crooked, are commonly so weak, that they easily sink under any great disease *.

To

* It will require seeing what the consequences actually are, in a number of cases, and especially under different states of health, before we can be justified in saying that no mischief is to be apprehended from what must happen to the Sacro-iliac joint,

On this part, Mr. Le Roy, with the partiality natural to the author of a new opinion, seems to be too little apprehensive and too decided. His opinion is first, that the ligaments will stretch in the living body, beyond what we should imagine from making experiments on the dead: and secondly, that dislocations of that joint, with such lacerations of the ligaments as may happen, if properly treated, will heal up, without ill consequences.

I believe, on the contrary, that any force applied to tear the body, will produce nearly the same mechanical effects on the living, and on the dead. The same force that pulls off an arm, for example, from a dead body, would do so, if that body were alive. There is no proof, I believe, that life gives additional strength, either to soft fibres or to inflexible bones: it only gives them a wonderful power of repairing the injury.

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To return from this digression, to the two great questions before us.

We shall readily allow, that the Cæsarian Section, though it may save the child, will almost always be fatal to the mother, and

As to any property which living ligaments possess of stretching, under violence, and permitting dislocations without laceration, I have long taught that, tho' a very general opinion, it seems not to have been founded on observation. Ligaments will not allow of dislocations in dead bodies without laceration: and elasticity, to any degree, either in ligaments or tendons, would ill agree with their use, in living bodies, which is, to keep the parts strongly together. And accordingly since this opinion has roused attention and examination, every case of a recent dislocation that I have known examined, has been found complicated with a laceration of the ligaments.

As to the second opinion, tho' dislocations of the arm generally do well, we see so many miserable and incurable effects of dislocations, and of strains upon joints, arising either from the peculiarity of the local injury, or from the state of the constitution, that I think we must not yet venture to say a dislocation of the *Sacrum* and *Ilium* will produce no ill effects. Our Author, whom we must respect for his candour as well as ingenuity, at the same time that we examine his doctrine with the freedom that becomes science, produces three instances of such a dislocation. The two first ended fatally; and they were certainly known, by the examination of the dead bodies; and the last, as it is related by Bassius, is by no means proved to be a dislocation of the *Sacrum*, nor is there, in my opinion, the least probability that it was; and therefore we must not venture to build upon it in this interesting question.

and therefore that it can never be of much service to mankind. Yet, were the *new operation* to save both in such cases, infinite as the advantage would be to a few individuals, the community would reap but little from it, because it is a case that occurs so very seldom. In this great city and its neighbourhood, it has happened but twice, I believe, in thirty-nine years; I might say, in a much longer period. Now, to compare the value of the two different practices: Supposing the life of the mother to be always lost in one way, and always saved in the other, it would only amount to *one* life saved, out of above twenty millions of people in twelve months. Almost every circumstance of human affairs, if attended to, would be found to have a greater effect in saving or taking away life. If this be a just estimate, it is evident that Mr Sigault was hurried into a little extravagance when he said, (p. 2d of his *Memoire*), that for want of a more gentle and safe method than the Cæsarian operation. “*La société, la patrie perdoient tous les jours une infinité des citoyens.*”

If

If the Cæsarean Operation has been more often performed at other times, or in other places, much may be reasonably charged to the account of *injudicious* practice; whether it arose from an ill-grounded opinion, which some practitioners have cherished, that it is not very dangerous; or, for want of knowing how much may be done, in very alarming cases, by a patient use of other means.

But, in the true case for the Cæsarian Operation, viz. when, without that dreadful resource, there is reason to believe that both the mother and child will be lost, it seems impracticable to save the child, by fitting the *Symphysis* of the *Ossa Pubis*: and therefore this operation can never be adopted, with that view, as a substitute for the Cæsarean Section.

To put this fact, which is of so much importance, beyond all doubt, we shall examine the *Pelvis*, in both the women upon whom the operation was performed in London, and of the woman at Leicester, all of which have been carefully preserved. A figure of the *pelvis* of Dr. Cooper's first patient, for the accuracy of which I can vouch,

vouch, has been published in the 4th vol. of *Medical Observations and Enquiries*. I have annexed an accurate, tho' slight figure of the pelvis of Dr. Vaughan's patient at Leicester; and shall give an account of Dr. Cooper's second case. The first figure of the first plate, is a view of the pelvis of Dr. Vaughan's patient, to shew in looking down upon it, the exact dimension of its cavity. This paper being intended, not for students of anatomy but for practitioners in midwifery, it would be unnecessary to point out the different parts of the bones by letters of reference. The material circumstance to be observed is, the *largest* circle that can be described between the *Sacrum* and the *Ossa Pubis*: it is pointed out by a circle of dots, and amounts to one inch and five sixteenths in diameter. In the same plate, the second figure expresses the largest circle of the same kind, in Dr. Cooper's first patient; and in the third figure is seen that of his second patient. The first plate shews, then, at one glance of the eye, the unhappy condition of those three patients, previous to the Operation.

The

The first figure of the second plate shews clearly, all the space that could have been obtained in Dr. Vaughan's patient, by flitting the Symphysis, and tearing the *innominata* asunder from the *Sacrum*, till the *Ossa Pubis* separated to the distance of two inches and an half. The *largest* circle that could then be described, in the interval of the bones of the *Pelvis*, amounts only to two inches and a quarter in diameter; which the authors of the new operation say will not allow a living child to pass. Mr. Sigault's Operation was founded upon the supposition that the pelvis was only two inches and an half wide. The second figure in this plate, exhibits the same circumstance with regard to the Pelvis of Dr. Cooper's first patient; where the enlarged circle amounts only to two inches and three-sixteenths in diameter. The third figure of the second plate represents the enlarged circle in the Pelvis of Dr Cooper's second patient. To put the whole into a few words: The first plate shews the largest circle that could pass through the *Pelvis* of those three women in the united state of bones; and the second plate represents the same sort of circles when the *Ossa Pubis*

were separated to the distance of two inches and an half.

In such cases as these then (and in such only would the practitioners of this country think of the *Cæsarian Section*), it is plain, that the *new* operation could not have saved both the mother and child, and cannot, with that view, be admitted as a substitute for the *Cæsarian operation* *.

We Mr. Le Roy is of opinion that in any *Pelvis*, by the separation of the *Ossa Pubis*, we may make more for the largest head: he says, page 28, "Si vous eussiez démontré que sur le bassin le plus mal conformé vous pourriez faire franchir la tête la plus volumineuse," and he repeats nearly the same thing a little after, viz. page 29, "au moyen de 17 Quoi (deux pouces et demi d'écartement) même sur un bassin mal conformé, on fera franchir une tête volumineuse."

The same author recommends cutting the *Symphysis* in a *Pelvis* of three inches and a quarter aperture, because otherwise the child cannot pass safely; page 73 he says, "depuis trois pouces et demi (c'est-à-dire deux pouces), la section est parfaitement indigne."

He must therefore allow, that his Operation would have failed in any of the three cases which we have illustrated by figures. Indeed he expressly says so in another place, viz. page 73. "Si le bassin n'a que cinq lignes d'ouverture de devant en derrière, au-delà de laquelle l'opération se ferait profitable, en tant qu'on aurait plus de trois pouces d'écartement. Il n'y aurait peut-être en ce cas d'autre ressource,"

We come next to consider the *second question*; which is, how far this new operation may be advisable, merely for saving the child, when the mother is in no great danger; viz. in those cases where the *Pelvis* is so narrow, that a full-grown or very large child cannot be born alive, and in which, therefore, the established practice of this country is, to open the head, and to deliver very cautiously with the crotchet.

Such cases, I know by long experience, do happen much more rarely than a great

M 2

number

" source, pour obtenir l'enfant vivant, que de pratiquer
" l'opération Césarienne."

There is a striking contradiction in the two premised propositions, viz. first, that the new operation would make sufficient room for a large head in the most deformed *Pelvis*; and secondly, that probably nothing but the Cesarean Section would save a child, if the aperture of the *Pelvis* were only one inch and two thirds.

This apparent contradiction he clears up by subjoining, that such a dimension of the *Pelvis* (less than 20 lines) is imaginary; "Heureusement cette dimension est imaginaire, et je ne connais point d'observations qui en ait jamais présentée la réalité." Here the author has ventured an assertion and opinion which facts do most certainly contradict. We have seen above three instances of a *Pelvis* much narrower than 20 lines. Among other curiosities in

number of practitioners may believe; and therefore I am convinced, that great mischief must be the consequence, if the generality of practitioners should think it warrantable to cut the *Symphysis*, whenever a woman has been long under the most distressing anguish of child-birth, without any considerable effect. Were this to be the case, there is great reason to fear, that the operation would be much oftener performed when altogether unnecessary, than when really wanted; a consideration which, if attended to, would make the firmest nerves shudder.

But

the anatomical part of my collectionn, are the following Specimens of ill-formed *Pelves* from female subjects.

1. A Pelves of one inch and three fourths aperture, or twenty-one lines.
2. Ditto of one inch and three eighths, or sixteen lines and an half.
3. Ditto of one inch, two eighths and an half, or nearly sixteen lines.
4. Ditto of eleven lines.
5. Ditto of five eighths of an inch, viz. just a little more than half an inch.

Four different specimens of a pelvis with a smaller aperture than 20 lines demonstrated twice yearly in a public course of lectures in London, put it beyond all doubt that the case is not imaginary, and that it is hazardous to found rules of practice on that supposition.

But still then, it will be said, may it not be useful in some few cases of that kind? In most, or all the cases where we can deliver the unhappy woman by this operation only, or by the crotchet, till more experience shall have given more knowledge, I shall give the preference to the crotchet, for the following reasons: 1st, Because it is so much more safe for the mother. When the crotchet is used with great caution, and the operation is executed slowly, giving intervals of ease, in imitation of the natural process, women recover almost as certainly, and as completely, as after a natural labour. 2dly, Because if all the confinement, all the sickness, pains, anxieties and terrors, which women so formed must suffer from pregnancy and labour, be fairly considered, their necessary and natural sufferings for men must be allowed by men to be sufficient. It would be ungenerous to lay it down as their duty to go much farther, to have the strongest joints of their body cut and torn asunder, to secure a *chance* only of a living child.

After having considered the two preceding important questions with no view but

to support the interests of humanity, I must add after all, that the Section of the *Symphysis* may possibly be found to be a much better resource than the Cæsarian Section, in a very few rare cases; not to save the child, as was said above, but to save the mother, which I think a much greater object. These cases, I say, will be very rare. I say so, because till I saw Dr Cooper's first case, I had never met with an instance of a woman who could not have been safely delivered by the crotchet; and I have seen it perfectly successful in more than one instance, where very intelligent practitioners, thinking it impracticable, had declared for the Cæsarian operation. Success, in these cases, depends on working slowly, taking away one little bit after another, letting the woman rest from time to time, and taking great care that she be not wounded by the instrument, or by the sharp bones of the child.

But, supposing a case, where no success can be expected from the crotchet, either on account of the extraordinary narrowness of the *pelvis*, or partly from that circumstance

stance, and partly from a great projection of the *lumbar vertebra* over the cavity of the *pelvis*, hardly allowing any part of the child to come within the safe reach of the crotch-
et; in such a case, instead of the Cæsarian Section which is so dreadful, because so generally fatal to the mother, this new operation, may be found to give the mother a good chance for life and tolerable health, if it will make room sufficient for bringing the child within the sphere of the crotch-
et. This, tho' it could only be advisable in exceedingly few cases, might be a considerable improvement; because it would have the advantage over the Cæsarian operation, of saving the mother instead of the child.

Yet, even upon that supposition, were it to be admitted into practice, without consultation and formality, there is great reason to fear, that (like the crotch-
et itself perhaps) it would do more harm than good. It might render a shocking operation very frequent, to the great terror of mankind, tho' the cases that could really call for it, would be extremely few. In midwifery, all instruments, and especially such as cut

or

or fear either the mother or child, should be suspected by the public; to keep ignorant, and inexperienced, and adventurous practitioners upon their guard; and to enforce great caution, and consultation, in such delicate and dangerous situations of human nature.

generally fatal to the mother, operation, may be found to give the mother a good chance for life and tolerable health, if it will make room sufficient for bringing the child within the sphere of the crotchet. This, tho' it could only be advisable in exceedingly few cases, might be a considerable improvement; because it would have the advantage over the Caesarian operation, of leaving the mother instead of the child.

T H E E N D.

Yet, even upon that supposition, were it to be brought into practice, without consultation, there is great reason to think that the crotchet itself (perhaps) is not so good as good. It might render a shocking operation very frequent, to the great terror of mankind, tho' the cases that could really call for it, would be extremely few. In midwifery, all instruments, and especially such as cut



FIG. II.

FIG.

PLATE I.

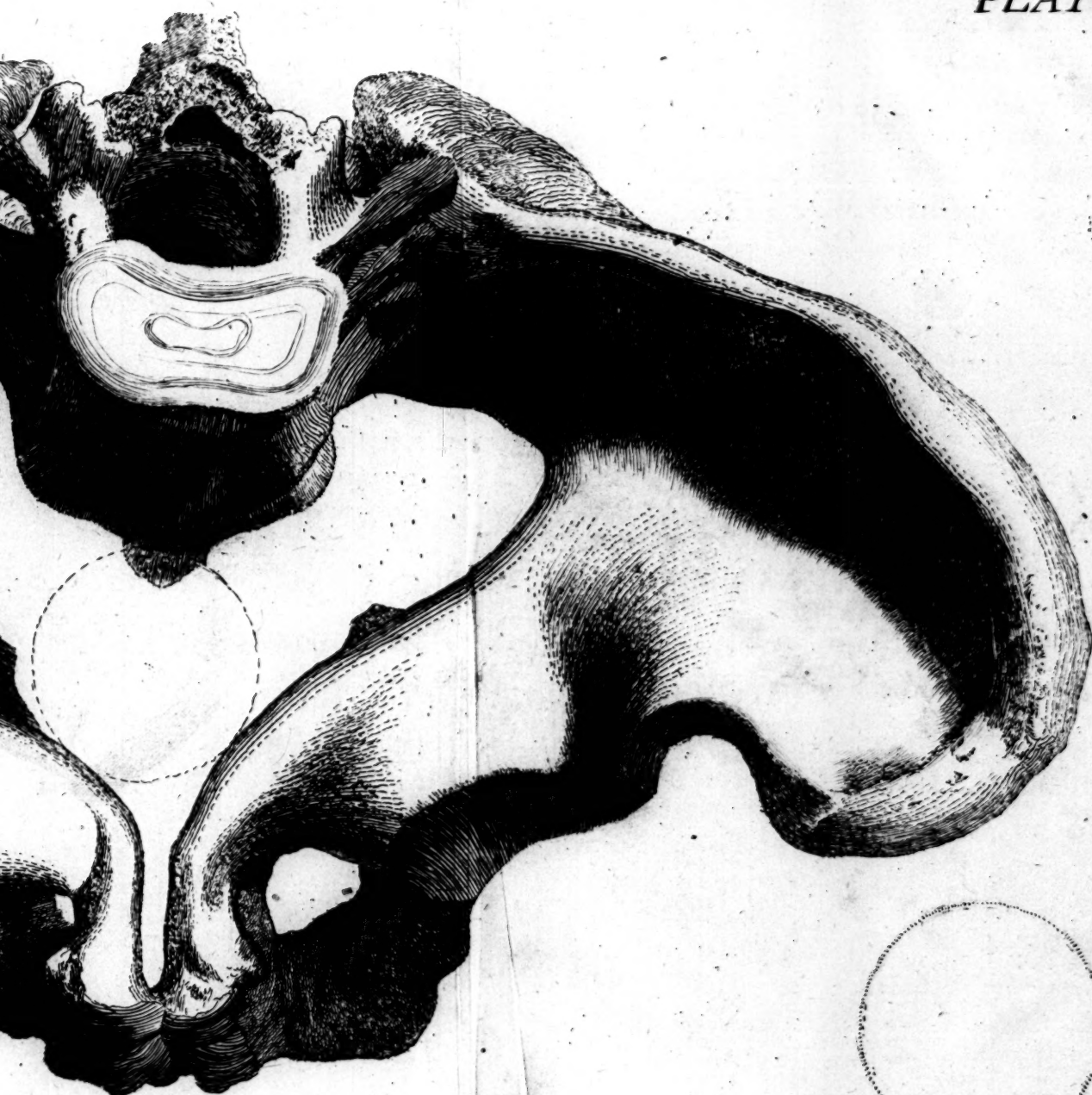


FIG. I.

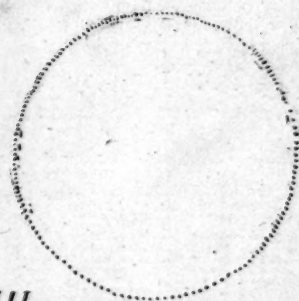


FIG. III.

Fred Birnie Teet.

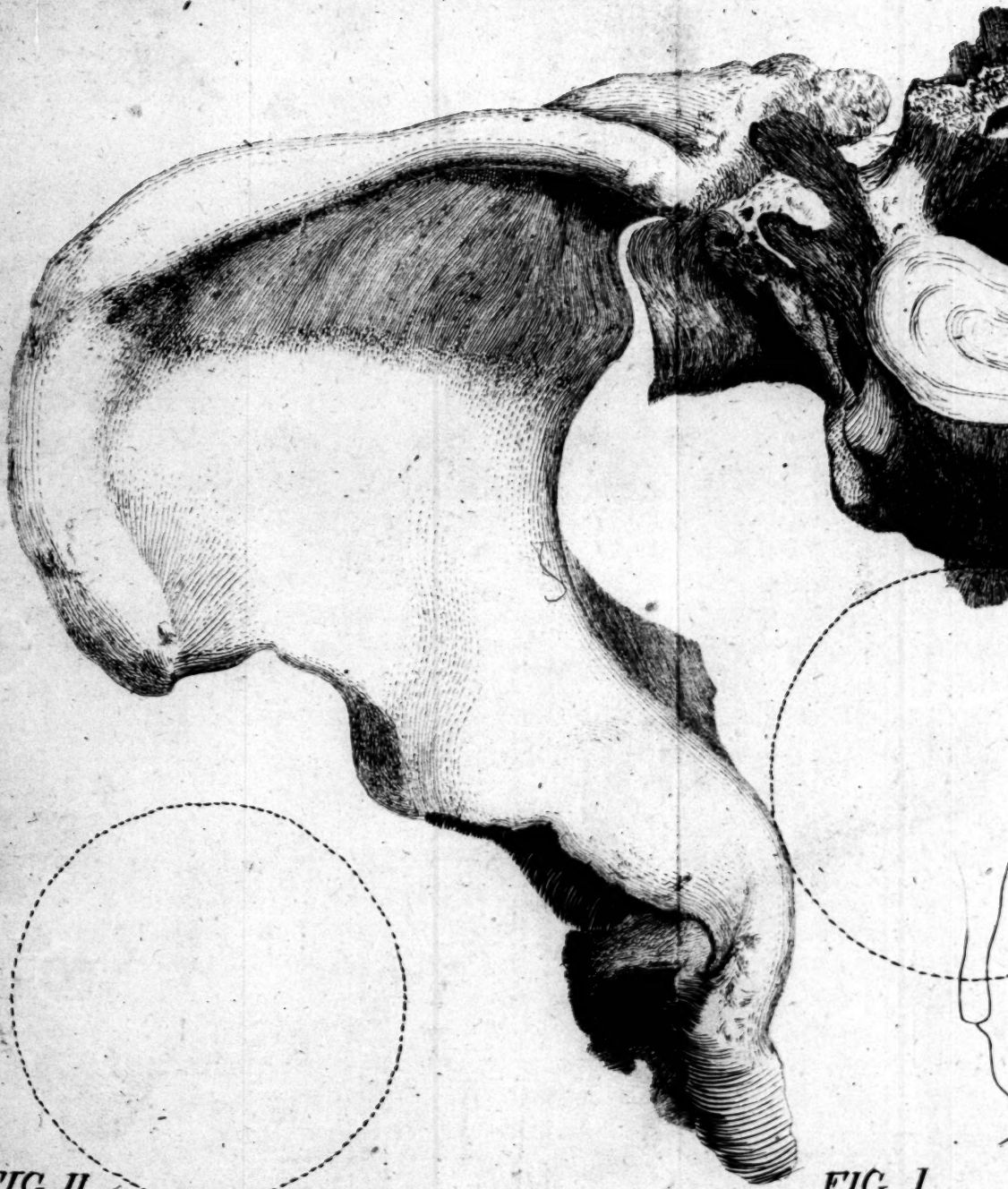
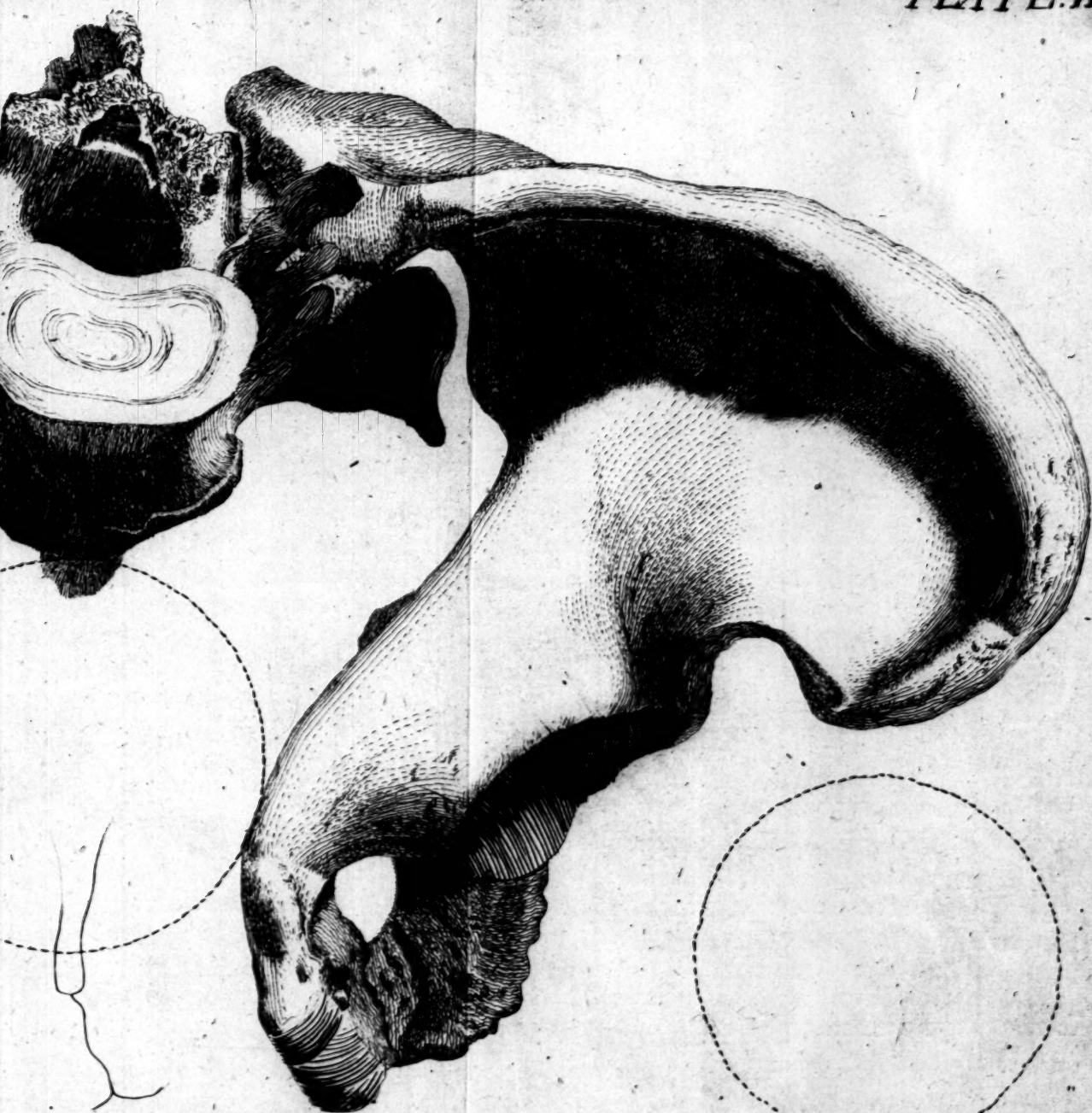


FIG. II.

FIG. I.



I.

FIG. III.

Foss. Bernice Foss.